

Page 2, line 17, replace "end to end" with --end-to-end--

Traditionally, trash bags have been manufactured and sold in rolls comprised of individual trash bags connected ~~end-to-end~~ end-to-end. The rolls of end-to-end connected trash bags are packaged in boxes or suitable containers for distribution. Whenever a trash bag is needed, the consumer unwinds the outermost trash bag from the roll and then separates the trash bag from the roll by tearing the line of perforations which connect it to the following bag of the roll.

Page 5, line 6, replace "hereinabvoe" with --hereinabove--.

Page 5, line 14, replace "perforation" with --perforations--.

It is known that edge-type wave-cut trash bags can be assembled overlapping dispensing on a roll in the same manner described ~~hereinabvoe~~ hereinabove in conjunction with conventional trash bags.

End-type wave-cut trash bags are manufactured by providing sets of closely spaced, parallel transversely extending seals at predetermined intervals along the length of a flattened blown-film polymeric tube. A transversely extending line of perforations is provided between the closely spaced, parallel seals. A wave or lobe-shaped line of ~~perforation~~ perforations is formed across the flattened blown-film tube at a location equidistant between successive sets of spaced, parallel seals.

Page 8, line 22, replace "Figures" with --Figure--.

~~Figure~~ Figure 6C is a diagrammatic illustration of a still later step in the process of the present invention;

Page 10, line 13, replace "the system may" with --the system 10 may--.

Page 10, line 14, replace "the source thereof" with --the source 14 thereof--.

Referring now to the Drawings, and particularly to Figures 1A, 1B, 2, and 3, there is shown a system 10 for implementing the process of assembling wave-cut trash bags for overlapping dispensing comprising the present invention. The system 10 receives a flattened blown-film polymeric tube 12 from a suitable source 14. The source 14 is illustrated in Figure 1A as comprising a coil from which the flattened blown-film polymeric tube 12 is directed into the system 10. However, as will be appreciated by those skilled in the art, the system 10 does not necessarily receive the flattened blown-film polymeric tube 12 from a coil; the system 10 may also receive the flattened polymeric film directly from the source 14 thereof.

Page 11, line 6, replace "formed my" with --formed by--.

Page 11, line 12, replace "perforation 24" with --perforations 24--.

Page 11, line 19, replace "seal/perforation zone 20" with
--seal/perforation zones 20--.

The seals 22 may be formed ~~my~~ by positioning a heated bar on one side and a cooperating anvil on the opposite side of the flattened tube 12. The heated bar engages the flattened tube 12 under predetermined pressure thereby softening the material of the tube 12 sufficiently to form a permanent bond between the opposite sides thereof. The line of ~~perforation~~ perforations 24 is formed by positioning a toothed bar and a cooperating anvil on opposite sides of the flattened tube 12. The tooth bar is advanced into engagement with the underlying anvil thereby forming the perforations comprising the line of perforations 24. As will be appreciated by those skilled in the art, various other procedures may be utilized to form the seals and/or the perforations comprising the seal/perforation zone zones 20.

Page 12, line 5, replace "line of" with --wave-shaped line of--.

Referring again to Figure 1A, the flattened blown-film polymeric tube 12 is directed from the bag machine 16 to a prefolding machine 26 which forms a first longitudinally extending fold in the flattened blown-film polymeric tube 12 whereby the tube 12 assumes a reduced width configuration. From the prefolding machine 26, the now once folded flattened blown-film polymeric tube 12 is directed to a wave cutting machine 28 which forms a lobe or wave-shaped line of perforations 30 in the tube 12. The wave-shaped line of perforations 30 is situated equidistant between adjacent seal/perforation zones 20 comprising the flattened blown-film polymeric tube 12.

Page 12, line 8, replace "wave shaped" with --wave-shaped--.

Page 12, line 8, replace "perforation 30" with --perforations 30--.

Page 12, line 17, replace "wave shaped" with --wave-shaped--.

Page 12, line 18, replace "wave shaped" with --wave-shaped--.

Page 12, line 18, replace "perforations will" with --perforations 30 will--.

The lobe or ~~wave-shaped~~ wave-shaped line of perforations 30 may be formed by positioning a star wheel having a toothed periphery and an anvil wheel having a flat periphery on opposite sides of the flattened tube 12. The star wheel is advanced into engagement with the anvil wheel thereby initially perforating the flattened tube 12. While the star wheel and the anvil wheel remain in engagement, they are moved laterally across the width of the tube 12 following a curvilinear path thereby forming the lobe or ~~wave-shaped~~ wave-shaped line of perforations 30. Other techniques for forming the lobe or ~~wave-shaped~~ wave-shaped line of perforations 30 will readily suggest themselves to those skilled in the art.

Page 13, line 23, replace "and the lines" with --and the wave-shaped lines--.

Page 14, line 15, replace "perforations formed" with --perforations 24 formed--.

Referring to Figures 2, 4, and 5, the winding machine 34 includes a perforation sensor 36 which is utilized to sense the lines of perforations 24 and the wave-shaped lines of perforations 30 as the flattened blown-film polymeric tube 12 moves through the winding machine 34 in the direction of the arrows 38. Referring specifically to Figure 4, the perforation sensor 36 may include signal generators 40 situated on opposite sides of the tube 12 as it moves through the winding machine 34. The signal generators 40 direct signals, which may comprise laser beams, infrared beams, or other types and kinds of electromagnetic signals into engagement with the outermost surfaces of the moving tube 12 and through the perforations formed therein. A signal receiving target 42 is positioned between the layers comprising the tube 12 as formed therein by the prefolding machine 26 and the V-folding machine 32 and is actuated by signals from the signal generators 40 passing through the perforations formed in the tube 12. In this manner each line of perforations 24 formed in the tube 12 is precisely identified.

Page 15, line 5, replace "perforations formed" with
--perforations 24 formed--.

Referring specifically to Figure 5, the perforation sensor 36 may instead comprise spark generators 44 situated on opposite sides of the tube 12 as it moves through the winding machine 34. The spark generators 44 direct signals, which comprise electric sparks into engagement with the outermost surfaces of the moving tube 12 and through the perforations formed therein. A signal receiving target 46 is positioned between the layers comprising the tube 12 as formed therein by the prefolding machine 26 and the V-folding machine 32 and is actuated by signals from the spark generators 44 passing through the perforations formed in the tube 12. In this manner each line of perforations 24 formed in the tube 12 is precisely identified.

Page 15, line 21, replace "gap 60" with --separation 60--.

Page 15, line 24, replace "nozzle 64" with --nozzles 64--.

Page 16, line 1, replace "nozzle 66" with --nozzles 66--.

Having reference to Figures 2, 3, 6A, 6B, 6C, and 6D, the winding machine 34 further includes three sets of rollers 50, 52, and 54 which function to separate the flattened blown-film polymeric tube 12 into individual trash bags and to position the leading edge of each following trash bag in an overlapping relationship to the trailing end of the preceding trash bag. As is best shown in Figures 6A, 6B, 6C, and 6D, the rollers 50 and 52 form a separation 60 between the trailing end of each preceding bag and the leading end of each following bag comprising the flattened blown-film polymeric tube 12. Each trash bag comprising the tube 12 is formed into a semi-loop 62 as it passes between the rollers 52 and 54. Nozzles 64 produce downwardly directed air jets while nozzles 66 produce upwardly directed air jets. As the gap separation 60 between preceding and following trash bags enters the zone between the rollers 52 and 54, the air jets emanating from the ~~nozzle~~ nozzles 64 push the leading end of the following trash bag downwardly while the air jets emanating from the ~~nozzle~~ nozzles 66 push the trailing end of the preceding trash bag upwardly. Meanwhile, the rollers 52 advance the leading end of the following trash bag into an overlapping relationship with the trailing end of the preceding trash bag thereby facilitating overlapping dispensing of the trash bags. From the rollers 52 the flattened blown-film polymeric tube 62 now having the leading end of each following trash bag positioned in an overlapping relationship with the trailing end of the preceding trash bag are directed to the winding mechanism 68 of the winding machine 34.

Page 16, line 13, replace "line of" with --lines of--.

Page 16, line 13, replace "seal/perforation zone" with
--seal/perforation zones 20--.

Referring to Figure 7, the perforations comprising the ~~line~~ lines of perforations 24 of the seal/perforation zone zones 20 extending between adjacent trash bags comprising the flattened blown-film polymeric tube 12 are uniformly spaced. However, the lobe or waved-shaped lines of perforations 30 extending between adjacent trash bags comprising the tube 12 are arranged in accordance with a predetermined pattern in order to prevent skewing of the trash bags when they are separated one from another in the operation of the winding machine 34. For example, the perforations within the zone 70 of each line of perforation 30 may be closely and evenly spaced while the perforations comprising the zones 72 may be widely and/or non-uniformly spaced. Other perforation arrangements capable of preventing skewing of the trash bags when they are separated one from another will readily suggest themselves to those skilled in the art.